

simple matters become invested with an air of great difficulty. Thus, to take one other example, we should have thought it needless to devote so much space to the difference between a right and left-handed spiral, as is given on p. 242, *et seq.*

There are also several clerical errors and misprints throughout the book, which we regret we have not space to point out, as they ought to be corrected in a new edition; some of the woodcuts, moreover, need alteration.

In conclusion, we must remark that, although a careful perusal of this work has led us to notice several things which ought to have been different, yet we are not insensible to the good features of this unpretending textbook, and we hope, therefore, that Dr. Guthrie will have a speedy opportunity of removing the blemishes which seriously mar the usefulness of his book. In the strictures we have ventured to offer we trust nothing offensive to the author has appeared, for whom we entertain, and are glad to be able to express, our sincere respect.

TWO AMATEUR EXPLORERS

"The Great Divide." Travels in the Upper Yellowstone in the Summer of 1874. By the Earl of Dunraven. With Illustrations by V. W. Bromley. (London: Chatto and Windus, 1876.)

Yachting in the Arctic Seas; or, Notes of Five Voyages of Sport and Discovery in the neighbourhood of Spitzbergen and Novaya Zemlya. By James Lamont, F.G.S., F.R.G.S. Edited and Illustrated by W. Livesay, M.D. (Same publishers.)

THE number of works of travel published within the last few months is probably unprecedented. Scarcely a week has passed during that time in which we have not had occasion to notice one or more in these columns. One noteworthy feature about these narratives of travel is that few of them are by what may be called professional explorers, men who have led expeditions into unknown or little known lands and seas for the sole purpose of extending our knowledge of them. They are mostly written by men who, solely from a love of adventure and sport, have left all the comforts and luxuries which wealth and a high social position can bring to undergo many of the hardships and privations which fall to the lot of those who have adopted discovery as their work in life. No doubt improvements in modes of travel, and especially in steam navigation, have something to do with this, as has also the tedium which occasionally comes upon every intelligent man who has to plod the weary round of the duties, and especially the pleasures, of civilised life. But, as we said last week, we are inclined to attribute this growing love of travel, of amateur exploration, in some degree to the general advance of intelligence urging those who can afford it to gratify their craving for knowledge by stronger stimulants than can be obtained from books. Possibly also some may think this growing love of travel in wild regions, mingled as it often is with intense delight in dangerous sport, is to some extent a breaking out of remote ancestral habit, of a habit which still clings to us from a time when our ancestors, like existing savages, were explorers and hunters of the wildest animals for dear life—a habit which only requires a favourable oppor-

tunity to be re-developed, though with a different aim. Whatever may be the causes, there can be no doubt about the fact of the rapidly-growing love of adventure and discovery, involving dangers and hardships of a very real kind. No better examples could be found than those of the authors of the two works before us.

The scene of the Earl of Dunraven's wanderings is in and around that wonderful and interesting region of North America, on the borders of Montana and Wyoming, known as the Yellowstone Park, which the U.S. Government have had the wisdom to set aside as a "gigantic pleasuring ground." Anyone looking at a good map of the United States will perceive the appropriateness of the term "The Great Divide" as applied to the mountainous region in the neighbourhood of the Upper Yellowstone. It is indeed the geographical centre of North America; here the principal rivers of the United States take their rise and flow in all directions—north, south, east, and west. We have already (vol. vi., pp. 397, 437) given considerable details and several illustrations of this remarkable region of gigantic geysers, and boiling mud and sulphur springs, and not much has since been done to add to our knowledge of it. The Earl of Dunraven, during the few weeks he spent in the district with a few boon companions, made a pretty careful examination of some of the most remarkable phenomena, and the record of this, supplemented by copious extracts from the accounts of the U.S. exploring expeditions, will give the general reader a very fair idea of the characteristics of this strange region. The Earl reached the Upper Yellowstone region by travelling northwards from Corinne on the Great Salt Lake; and both on his journey northwards, during his hunting of the mountain-sheep or bighorn (*Caprovius Canadensis*), the wapiti, and other wild animals, and his exploration of the geyser and boiling spring region, he and his party occasionally endured considerable hardship, which, however, they all seemed thoroughly to enjoy as an essential part of the programme of the expedition. Considerable details are given as to the character and condition of the various tribes of Indians to be met with in the neighbourhood of the region traversed, and the Earl has much to say on the Indian question. We do not think, however, that our ignorance of the Indian, his habits and traditions, is so great as the Earl would make out to be the case. There really exists a vast amount of information concerning the aborigines of North America at least, and Mr. Bancroft is doing good service in collecting into one magnificent work all that is known of the natives of the Pacific States. Still there can be no doubt that the American Indians are rapidly dying out, and in the interests of science it would be well to use all diligence in supplementing the doubtless by no means complete information we at present possess. As to civilisation and conversion, the Earl of Dunraven has as bad an opinion of the Indian as Mr. Monteiro and Capt. Burton have of the nature of an African.

On the whole we may say that the Earl of Dunraven's work is a jolly rollicking narrative of adventure and sport, mixed up with a great deal of useful information concerning one of the most interesting regions in the American continent. The illustrations are interesting, and some of them help out considerably the descriptions in the text,

A good map of the territories around the Yellowstone region, and a large scale-map of the Upper and Lower Geyser Basins, enable the reader to follow the author in his wanderings and descriptions.

From a scientific point of view Mr. Lamont's book is more valuable than the one we have been speaking about. So long ago as 1858-59, Mr. Lamont made voyages, mainly for sport, to the Spitzbergen Arctic region; and in 1869-70-71 he made other three voyages. In the volume before us he has brought together some of the most valuable results of his observations during these voyages, and while devoting considerable space to his sporting adventures with the walrus, the seal, and the bear, he gives much information of scientific value. His sporting skill stood him in good stead, as from his large takes of walruses, seals, and bears, not to mention reindeer and smaller game, he must have been, in 1869 at least, considerably recouped for the expenses of his voyage.

Mr. Lamont, very naturally judging from his own success, is inclined to place more value on private Arctic enterprises than on elaborately equipped Government exploring expeditions. He refers to the expedition in the *Polaris*, commanded by a civilian, and which got further north than any ship had previously done. But we think that any one who reads the narrative of that unfortunate expedition unprejudicedly, must conclude that had the expedition been under strict naval discipline it would have reached a point still further north, would have accomplished more in the way of scientific observation than it did, and would not have ended with the disaster that befell it. The last Payer-Weyprecht expedition, though not a Government one, was practically under naval discipline, and the English Government expeditions referred to by Mr. Lamont, did not fail in their endeavours to push northwards because they were such. But Mr. Lamont speaks as if the main object of Arctic exploration were to get as far north as possible, whereas, in the eyes of scientific men, this is a point of minor importance; and they maintain rightly, we think, and their opinion is supported by past experience, that no Arctic expedition can be adequately equipped to collect all the scientific data which can be so abundantly obtained in these regions, unless it be sent out by Government and be conducted with all the method and strictness which naval discipline alone can enforce. Private enterprises like those of Mr. Lamont and the whale fishers, can do much to add to our knowledge of the Arctic regions, but if we had had to depend entirely on such means, what would have been the amount and value of our knowledge at the present day?

Mr. Lamont gives a minute description of the construction of his admirably built steam yacht the *Diana*, which came unscathed through many dangers. In 1869 he sailed as far as the Kara Straits, which he did not enter. Next year, however, he passed through Pet or Jugor Straits, and penetrated a short distance into the Kara Sea, coming out by the Kara Straits. He sailed up the west side of Novaya Zemlya as far as Admiralty Peninsula, and after several trials succeeded in passing through the Matoschkin Schar. He landed on several points of the island, and gives some valuable notes on the fauna and flora which he observed. In 1869

he sailed along the edge of the ice-pack a little north of the 75th degree of latitude, to Spitzbergen, the coasts and gulfs and islands of which in his various voyages he has examined with great minuteness, and contributes several notes on the physical geography and natural history, which will be found of value as supplementary to those of other observers. Regular temperature soundings were taken and the surface-temperature observed, the condition and movements of the ice noted, especially in the Kara Sea, as well as any evidences of currents; and Mr. Lamont's observations on these points, and especially on the movements of the ice in the Kara Sea, we would recommend to the notice of all interested in Arctic physics and Arctic geography. Mr. Lamont has a right to be considered an experienced Arctic observer, and his opinions should be received with respect. Years ago he conjectured that land should be found to the north between Spitzbergen and Novaya Zemlya; the Payer-Weyprecht Expedition has confirmed this conjecture. He tried hard to get at least a sight of Wiche's Land, but failed, though the Norwegian captains succeeded in reaching it in 1872; for there is no doubt that Petermann's King Karl Land is that discovered by Edge 250 years ago. Mr. Lamont thinks it possible that it may be connected with the recently-discovered Franz Josef Land.

Mr. Lamont records not only his own observations, but being well up in the literature of the exploration of the region he visited, gives many valuable notes of the work done by previous explorers, as well as by some who have been there since his last voyage. We would recommend to naturalists his observations on the differences between the reindeer of Spitzbergen and that of Novaya Zemlya; the former he thinks identical with the wild and tame deer of Norway and Lapland, whereas the Novaya Zemlya type appears to him more allied to the reindeer of the American Continent. His theory as to the migration of the Spitzbergen type is very remarkable.

There are many illustrations throughout the work, some of them not well drawn, but all of them helping the reader to realise what is to be seen in the regions to which they refer. Various maps and outlines of coasts add to the value of the work, which we assure our readers they will find full of entertainment and information.

OUR BOOK SHELF

Die Neuere Schöpfungsgeschichte nach dem gegenwärtigen Stande der Naturwissenschaften. By Arnold Dodel, Privat-docent at Zürich. (Leipzig: Brockhaus, 1875.)

ANOTHER work on Evolution, equalling the "Origin of Species" in size. The author of these twelve lectures has carefully studied every important work on the subject, and endeavours to give a plain and intelligible account of Evolution in relation to the whole field of biology. The style of the work is vigorous and combative, and considerable success in exposition is attained. But many definite conclusions are announced where the most far-seeing evolutionists would only put forward tentative hypotheses. We think it will be far more advantageous for German or other students who have any real knowledge of biology to study for themselves Mr. Darwin's works than to take a less efficient, though an honest and accomplished guide in Dr. Dodel. The book is well illustrated with engravings of interesting structures in plants and animals bearing on Evolution; it also contains a